



Get going with G!

Empowering the LabVIEW Community



# Vision:

- A LabVIEW community making the best version of itself.
- Improving our capability through collaboration.



# Who we are:

- GCentral is for programmers who need to find, share or collaborate on G reusable code or software engineering tools.
- GCentral is a non profit organization that provides a platform for G code packages and collaboration resources.
- GCentral is independent and driven by community experts.

# Organization:

## Board of Directors

Quentin Alldredge



Fabiola De la Cueva



Danielle Jobe



## President

Chris Cilino





# Organization:

## Steering Committee

Jeff Kodosky  
Jon McBee  
Brian Powell

Michael Aivaliotis  
Brian Hoover  
Michal Radziwon  
Derek Trepanier

# Organization:

Volunteers

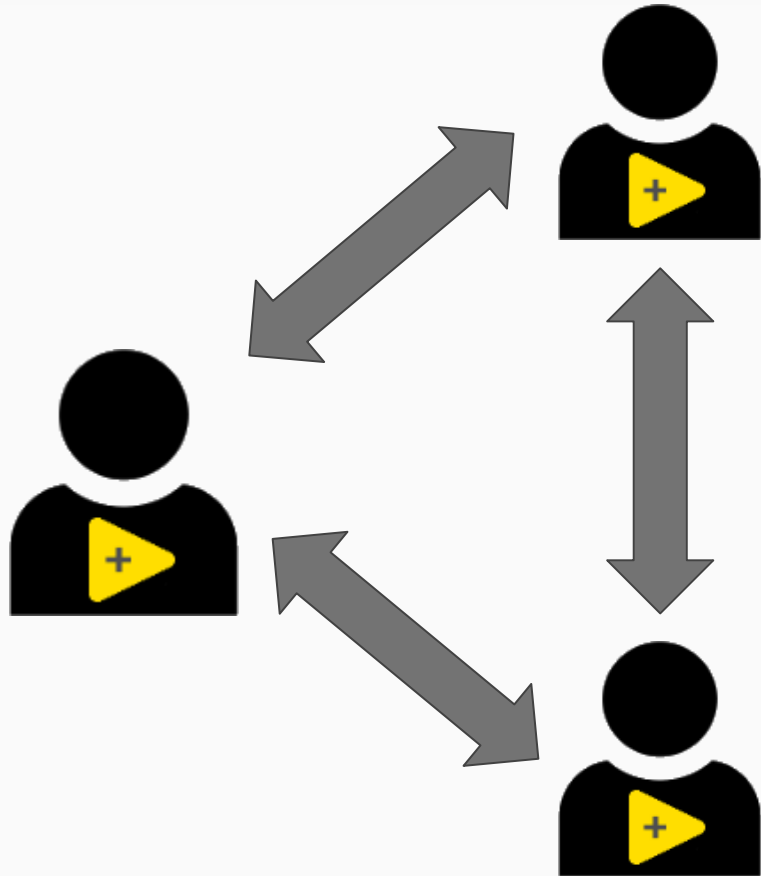
Matthias Baudot



Siva Shankar



# Vision: It's All About The Community



Middle School / High School / College Student  
Research Assistant / Professor

Programmers

Production line  
technician

Hobbyist

Test & Measurement Infrastructure Architect

Alliance partner

Single employee at a startup

Member of a small  
infrastructure group

Consultant





Phase 1

Phase 2

Phase 3

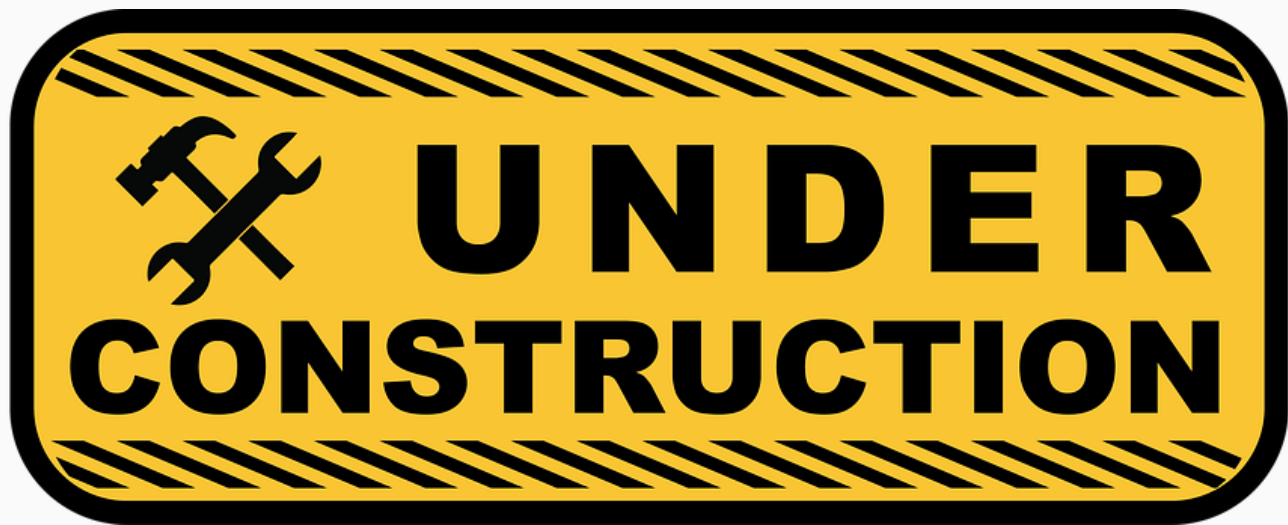
...





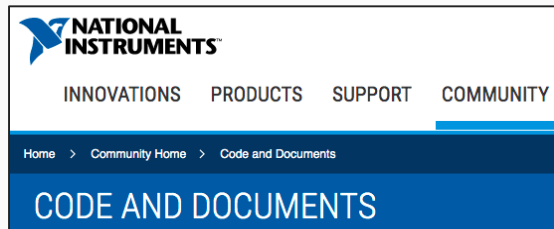
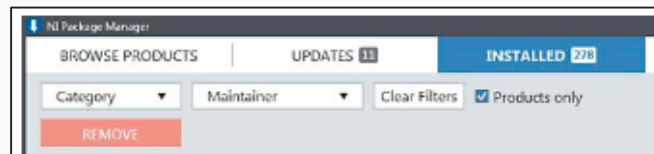
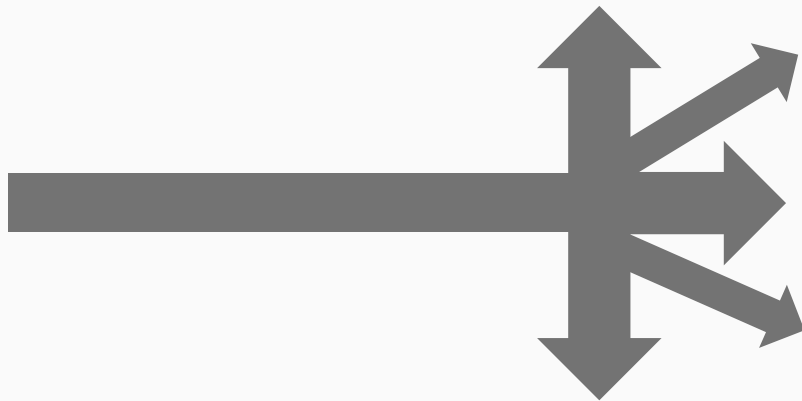
We are not creating  
yet another package  
manager.







# Find / Discover: Today



JKI VI Package Manager

File Edit View Package Tools Window Help

2019

Name	Version	Repository
Calculator Toolkit	1.0.0.2	NI LabVIEW Tools Network
Caraya Unit Test Framework	0.6.3.14	JKI Package Network
Cassandra-driver	0.2.0.4	NI LabVIEW Tools Network
CI 9120	1.1.0.46	NI LabVIEW Tools Network
Circular Chart Base	1.0.0.13	NI LabVIEW Tools Network

All Products and Services

### NI Tools Network

Learn

NI Tools Network

What is the NI Tools Network?

Contribute a Product

Show By

Software

Narrow by

Product Family

VIEWVIEW

Clear all

Cost

Free (188)

Free Trial (188)

Search Add-ons

Enter Add-ons and Apps

NI Tools Network

Search

vipm.jki.net/packages

Wiki Docs NI Sites python Microsoft Office Ho... Composed Systems Allian

VI by JKI

Search for LabVIEW™ add-ons...

Newest

Most P

RTI DDS Toolkit

RTI DDS Toolkit

LabVIEW

An easy t

microcon

★ 0

★ 33

NI Package Manager

BROWSE PRODUCTS

UPDATES 3

Category Maintainer Clear Filters

INSTALL

Name

802.11 Application Framework for LV Comms License Agreement

ActiveSync 4.5 License Agreement

Biomedical Startup Kit License Agreement

gpackage.io

LabVIEW Wiki Docs NI Sites python Microsoft Office

GPM

Search the registry...



VI Packages

NI Packages

G Packages

**JKI VI Package Manager**

File Edit View Package Tools Window Help

2010

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LabVIEW

An easy microcon

★ 0

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NI Package Manager

BROWSE PRODUCTS

UPDATES 1

Category Maintainer Clear Filters

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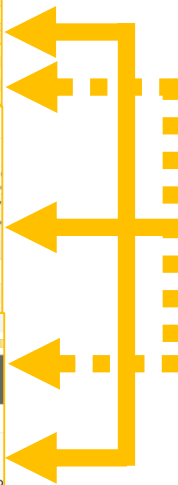
ActiveSync 4.5 License Agreement

Biomedical Startup Kit License Agreement

gpackage.io

Search the registry...

GPM



VI Packages 

NI Packages 

G Packages 

← → ↻ ⌂ intranet.studiobods.com/public/temp/GCentral/Packages/

Apps LabVIEW Wiki Docs NI Sites python Microsoft Office

**GCentral**

Search

► 1-DOF Helicopter Software

► 10dof

► 3D FEM

JKI VI Package Manager

File Edit View Package Tools Window Help

2010

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All Products and Services

NI Tools Network

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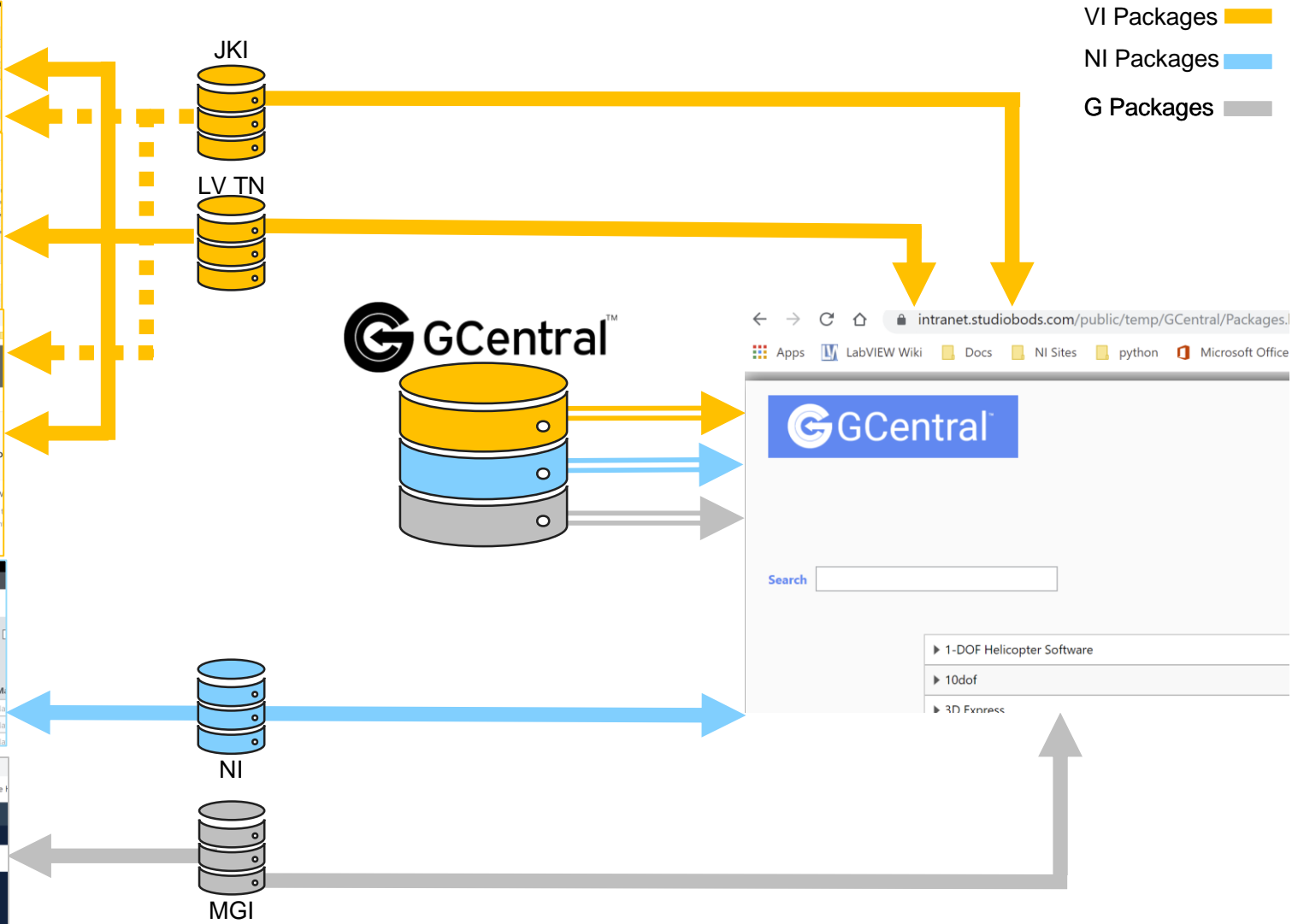
ActiveSync 4.5 License Agreement

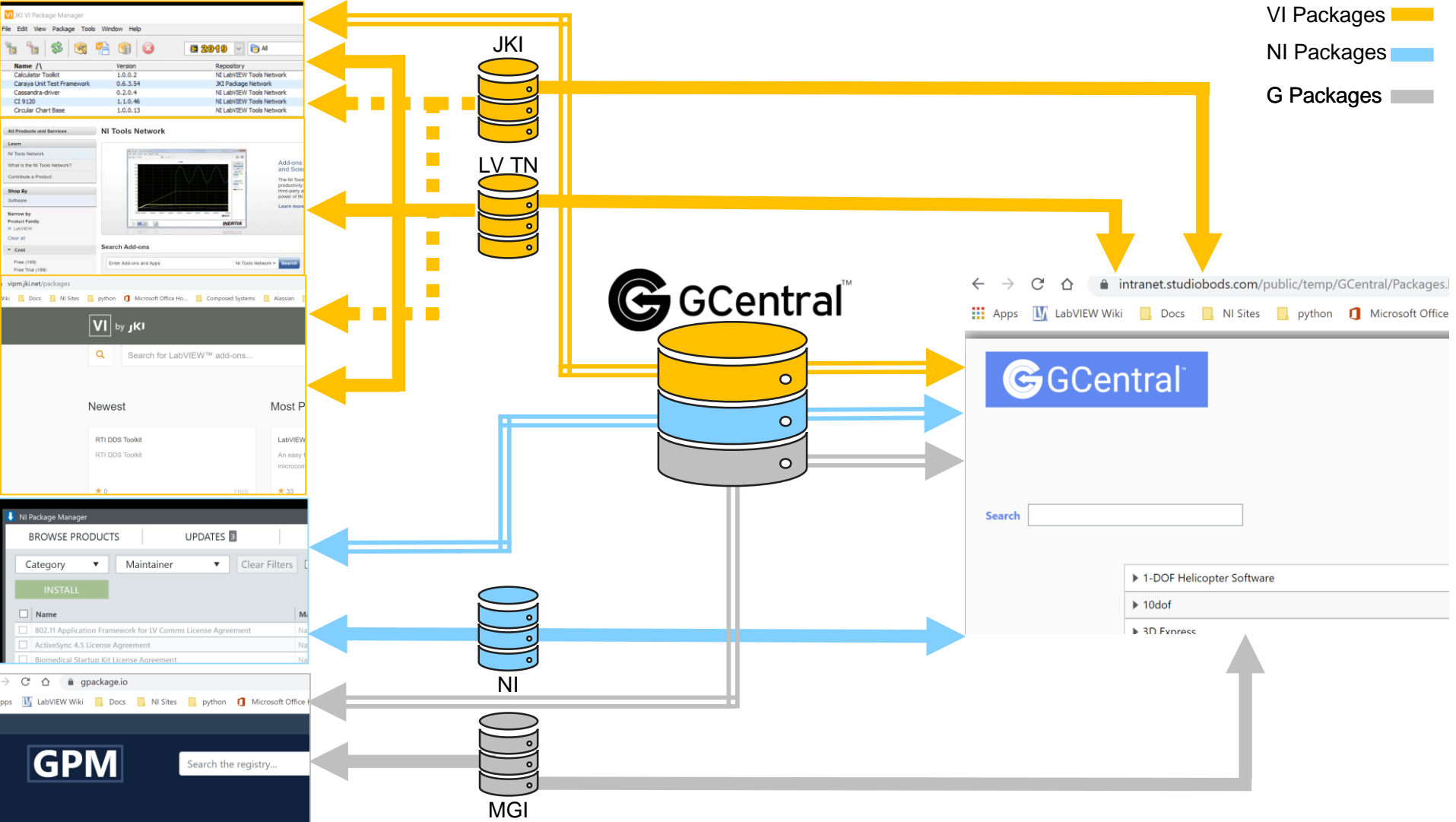
Biomedical Startup Kit License Agreement

gpackage.io

Search the registry...

GPM









# DEMO: GCentral.org

Home



## GCentral

Get going with G!



GCentral Overview presented at  
LabVIEW Architects Forum (LAF) in  
Austin (6min)

For a quick overview of GCentral. Watch this video.

For more information and to help our cause. Please  
send an email to [info@gcentral.org](mailto:info@gcentral.org)

# Prototype Courtesy of Studio Bods, LV NXG

Matthias Baudot  
Studiobods.com



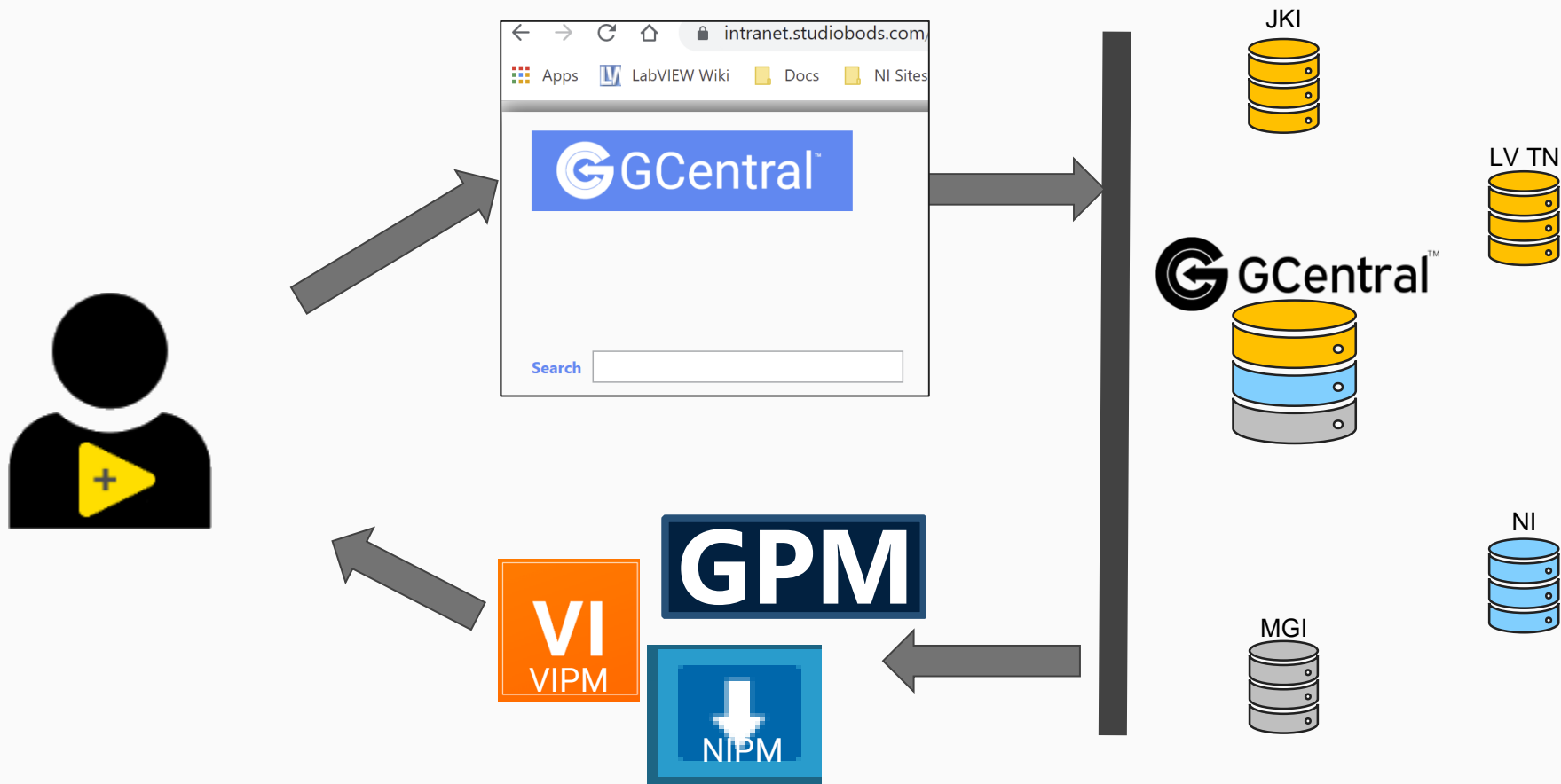
LabVIEW NXG  
WebVIs



<https://github.com/gcentral/Website.git>



# Find / Discover: Ease Access





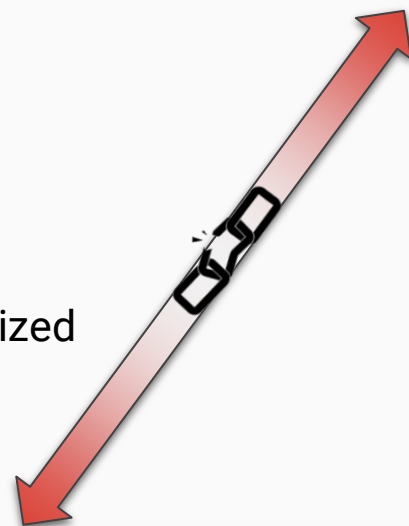
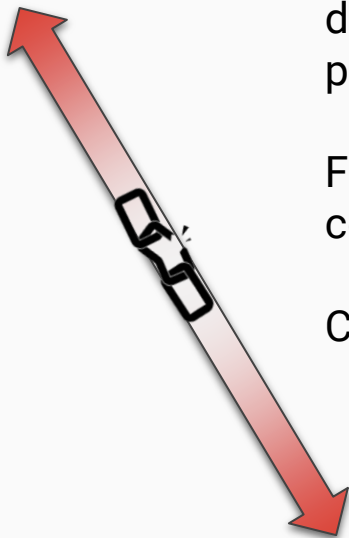
# Find / Discover: Multi PKG Manager Problem



Inter-package manager  
dependency is not  
possible

Fractures the  
community's code

Community is penalized





# Package Manager Comparison on LabVIEW Wiki

[https://labviewwiki.org/wiki/Package\\_Manager\\_Comparison](https://labviewwiki.org/wiki/Package_Manager_Comparison)

## Package Manager Comparison

This is the comparison of package management solutions in the LabVIEW community.

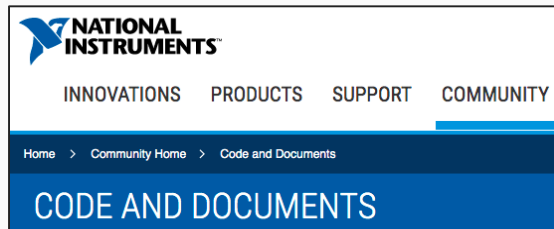
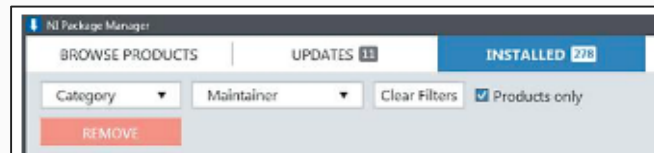
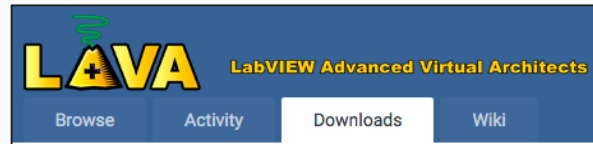
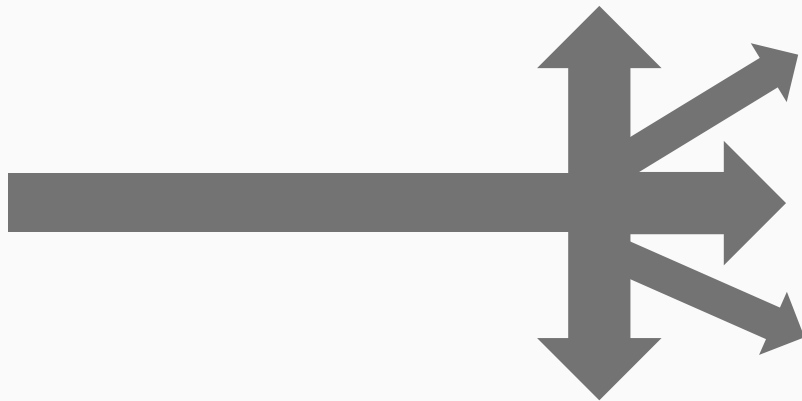
Characteristic	VI Package Manager (Free) <a href="#">↗</a>	VI Package Manager (Pro \$599/user/year) <a href="#">↗</a>	NI Package Manager <a href="#">↗</a>	G Package Manager (GPM) <a href="#">↗</a>
Installs With LabVIEW	Yes	No	Yes	No
Created By	JKI	JKI	National Instruments	MGI (Moore Good Ideas)
Year Released	?	?	?	2018
Open Source	No	No	No	Yes
Language Written In	G	G	C#	G
Free To Install	Yes	Yes Trial	Yes	Yes
API	No	Yes	Yes	Yes
Local repository management <sup>1</sup>	No	Yes	Yes	Yes
Supports multiple LabVIEW versions from a single package	Yes	Yes	No	Yes
Natively supports mass compile after install	Yes	Yes	No	Yes
Scope of package installation <sup>2</sup>	LabVIEW IDE	LabVIEW IDE	LabVIEW IDE	Per Project <sup>5</sup>
Supports LabVIEW NXG	No	No	Yes	No
Integrates Into LabVIEW IDE <sup>8</sup>	No	No	No	No
Integrates Into LabVIEW NXG IDE <sup>9</sup>	No	No	Yes	No
Create pallets as a part of the package creation	Yes	Yes	No	No
Supports installation to symbolic paths (user lib)	Yes	Yes	No	N/A <sup>6</sup>







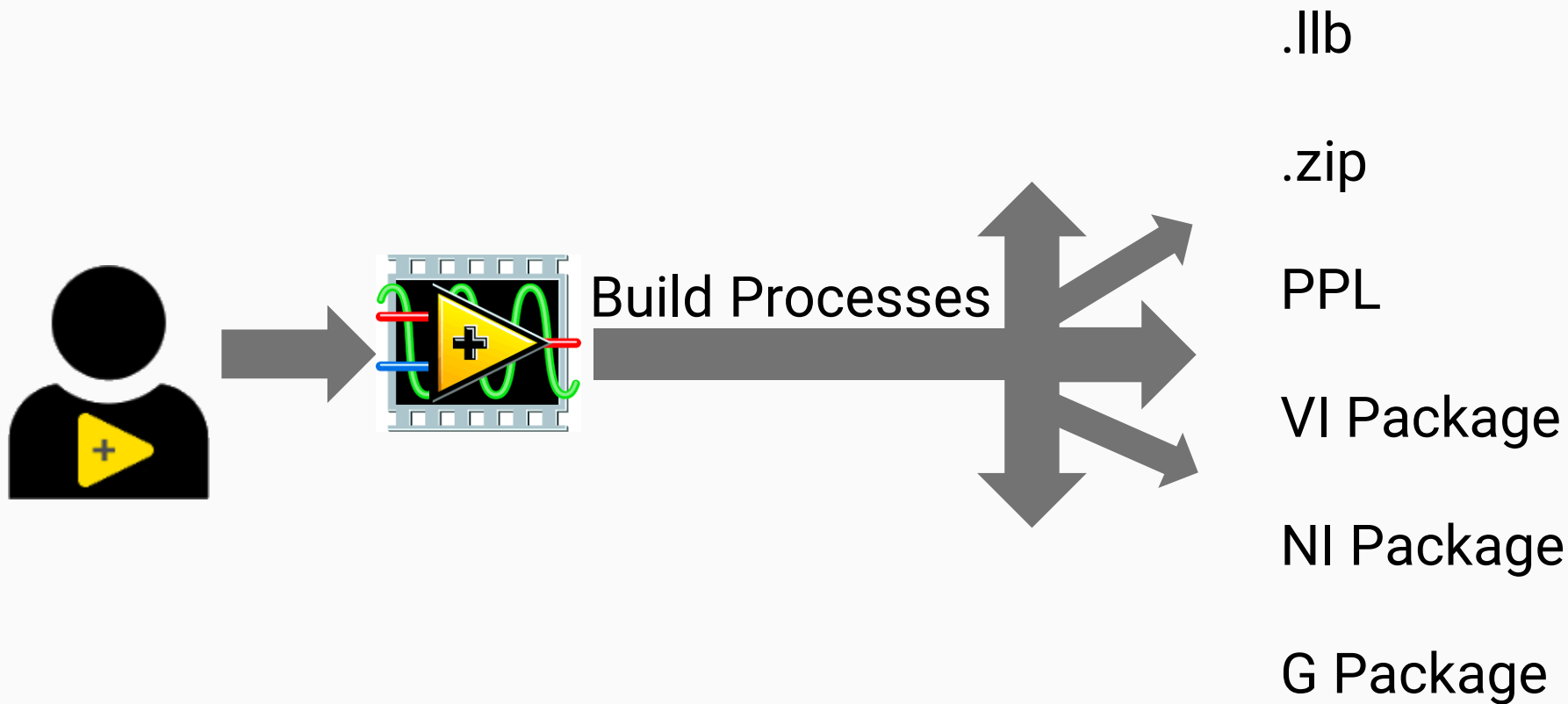
# Contribute: Today - Where?





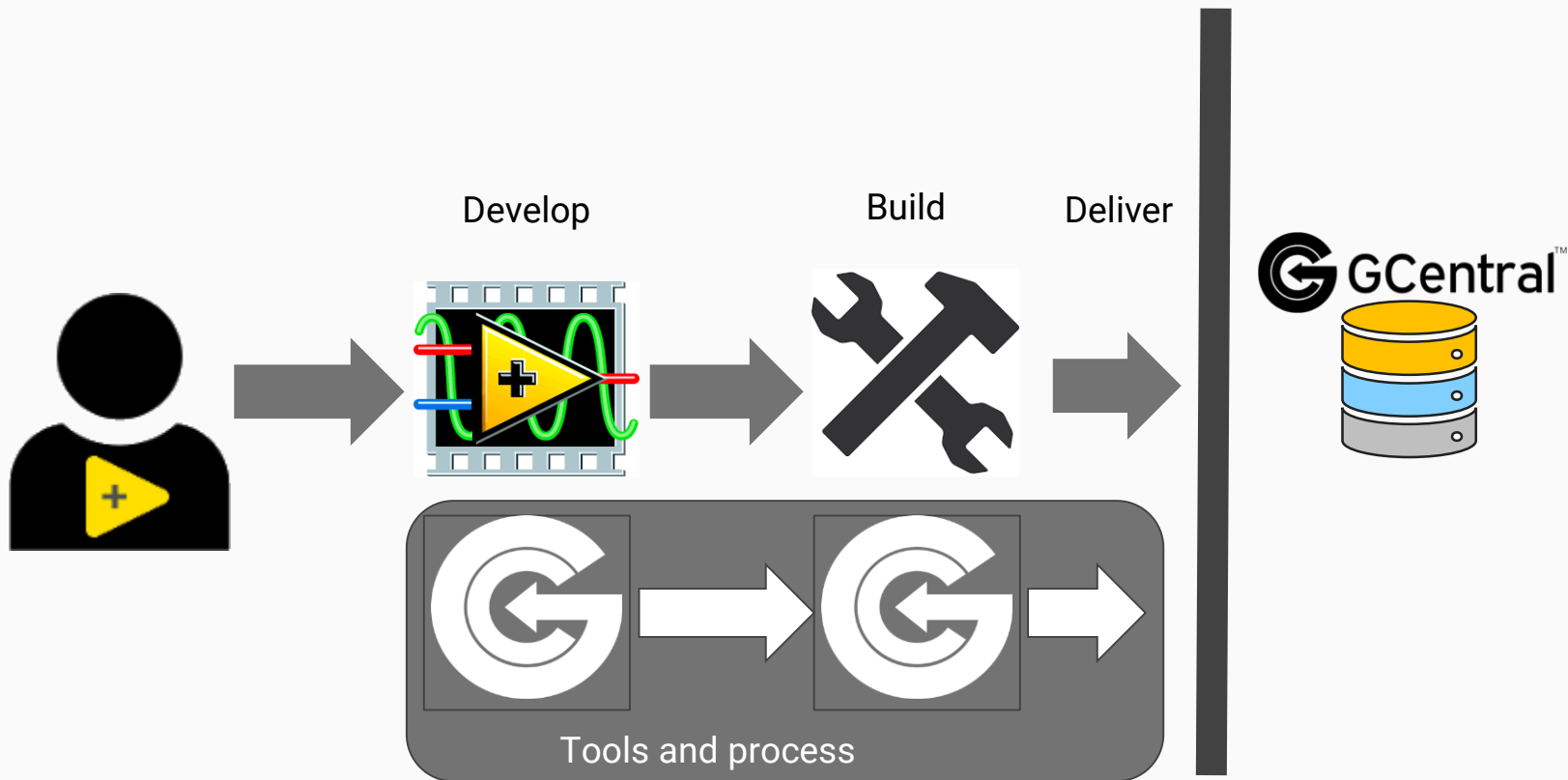


# Contribute: Today - Which export type?





# Contribute: Community Build Process





# Contribute: Community Build Process - MVP



## Requirements

1. Free
2. Open source
3. Extensible
4. Builds multiple package types
5. Aware of GCentral Repo
6. Determines build order
7. Integrates with CI
8. ...



# Contribute: Product Page

A customizable product page is generated.

## Product Page's Purpose:

1. Educate
2. Inspire confidence to use
3. Build a developer's personal brand/credibility



### Educate:

- Project's Name
- Readme
- Design Documentation
- API Documentation
- License information
- Release notes
- ...

### Inspire Confidence:

- # of Downloads
- # of Dependent packages
- Has a Test Suite
- Link to SCC Repo
- Issue Tracking
- # of Releases
- ...

### Build A Brand:

- Author
- Link to personal site
- Link to business page
- NI Certifications
- ...



# Contribute: Product Page Example (gpackage.io)



@cs/ci

Details

Changelog

License

## composed-ci

composed-ci takes the LabVIEW-specific configuration complexities out of your continuous integration.

This package exists because of the following premises:


1. A LabVIEW project should know how to test and build itself.
2. Configuration and testing of the LabVIEW-specific test and build steps should be able to be performed in the LabVIEW IDE with an equivalent command line API available for the CI server.

By managing LabVIEW's test-and-build configuration in the project, the API and number of parameters the CI server needs to manage are minimized, which decouples projects from the CI server. This assists with configuring the CI server by removing responsibilities, and minimizes the amount of information that the CI server has to know about your project.

Test-and-build parameters are stored in a configuration file that lives next to your source code. Includes a user interface to select which build specifications and tests to run.

This project uses VI Analyzer and JKI VI Tester.

This package depends on the following VI Packages (all available on VIPM): LabVIEW CLI by Wiresmith Technology JKI\_labs\_tool\_vi\_tester by JKI VI Tester JUnit XML Test Results by JKI VI Analyzer Results to Checkstyle XML Format by National Instruments

 gpm install @cs/ci



How do I use this package?

Published by [steveball](#) a month ago

1.1.0 is the latest release

MIT

[composed.io](#)

[bitbucket.org/composedsystems/composed-c...](#)

Stats

254 downloads.

Keywords

[ci](#) [continuous integration](#) [cd](#) [continuous deployment](#)

Dependencies (0)

none





# Co-Develop: Advantages



There are many advantages to co-development.

1. The community isn't confused by multiple instances of the same tool. Example: i3JSON, JKI JSON, JSONtext
2. Many people working on one tool concentrates innovation energy on features vs many people working many instances wastes time on feature duplication.
3. We can learn from each other's experience
4. We start to develop standard coding styles
5. ...



# Co-Develop: Problems



Reasons we often “reinvent the wheel”:

1. Can't easily find the solution (if it exists already).
2. Too expensive to evaluate if your idea is sufficiently different.
3. Takes too much time to decipher another person's code/disk organization (no standards).
4. No way of knowing how responsive the author is to requests.
5. Fear of introducing a bug (no test suite)
6. The solution is distributed as a VI Package only and you want to use GPackages/NI Packages
7. Poor API design
8. ...





# Co-Develop: Enhance or Originate?



## GCentral.org

1. Search for code
2. Read product pages
3. Learn about the developer
4. Get source and quickly evaluate
5. ...

## SW Engineering Tools

1. Repo templates
2. .lvproj templates
3. GCentral build process
4. CI/CD
5. ...

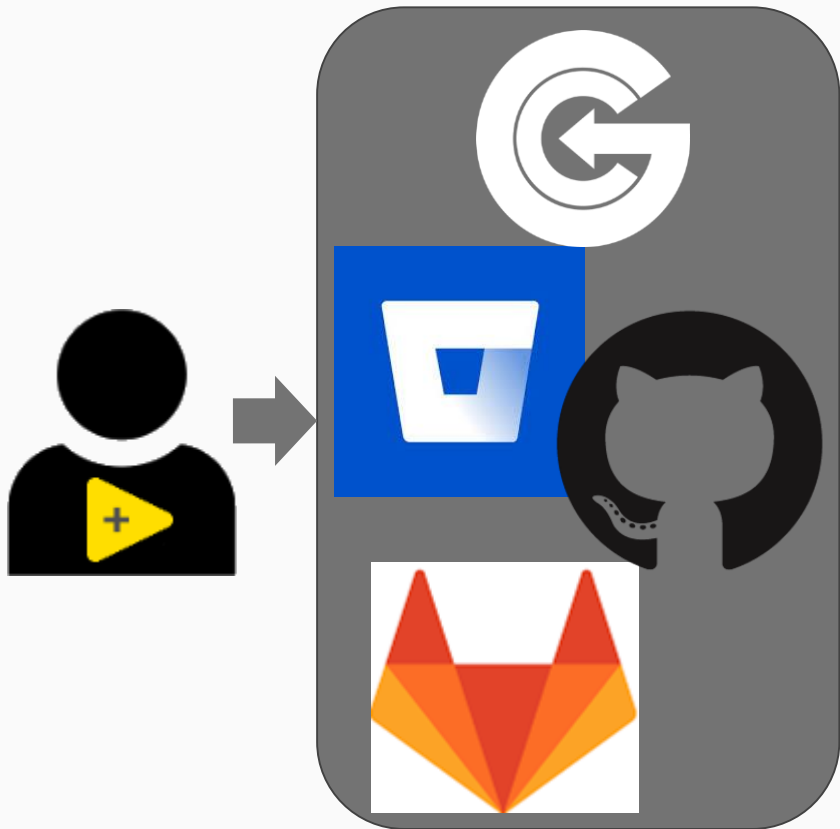


Enhance

Originate



# Co-Develop: Originate - Example

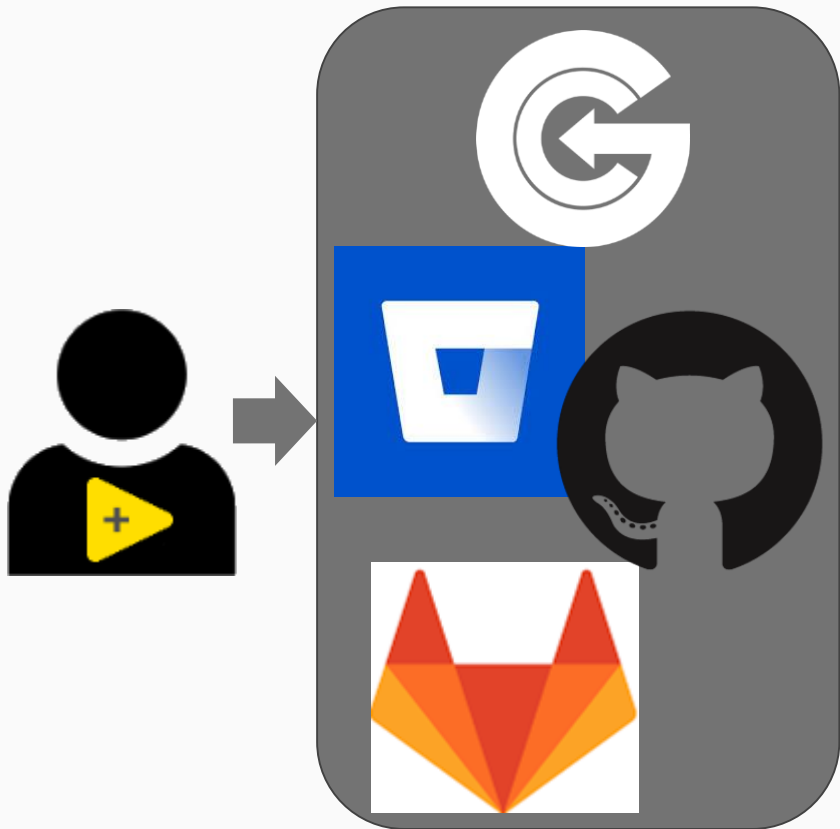


Clone from GIT template repository

1. Includes standard directory structure
2. Includes standard .lvproj designed to work with GCentral build process
3. Fully Documented Template
4. ...



# Co-Develop: Originate -Template GIT Repository



## Build

- Build Specifications
  - Template.lvproj
  - Template.vipb
- Custom Build Steps
  - NI Package
    - Pre/Post.vi
  - VI Package
    - Pre/Post.vi
  - GPackage
    - Pre/Post.vi

## Source

- Application
  - Class1
    - Accessors
    - API
    - Class1.lvclass
- Support
- ...





# Confidence - GCentral will live as long as G does

## Statistics

182,852 projects

1,346,934 releases

1,946,404 files

336,731 users



## Sponsorship

Status: All Systems Operational

Developed and maintained by the Python community, for the Python community.

[Donate today!](#)

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Google

Google  
BigQuery

SENTRY

Sentry  
Error logging

aws

AWS  
Cloud computing

DATADOG

DataDog  
Monitoring

fastly

Fastly  
CDN

SignalFx

SignalFx  
Supporter



# Confidence - Determine Quality of Code

## Inspire Confidence:

- # of Downloads
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- Has a Test Suite
- Link to SCC Repo
- Issue Tracking
- # of Releases



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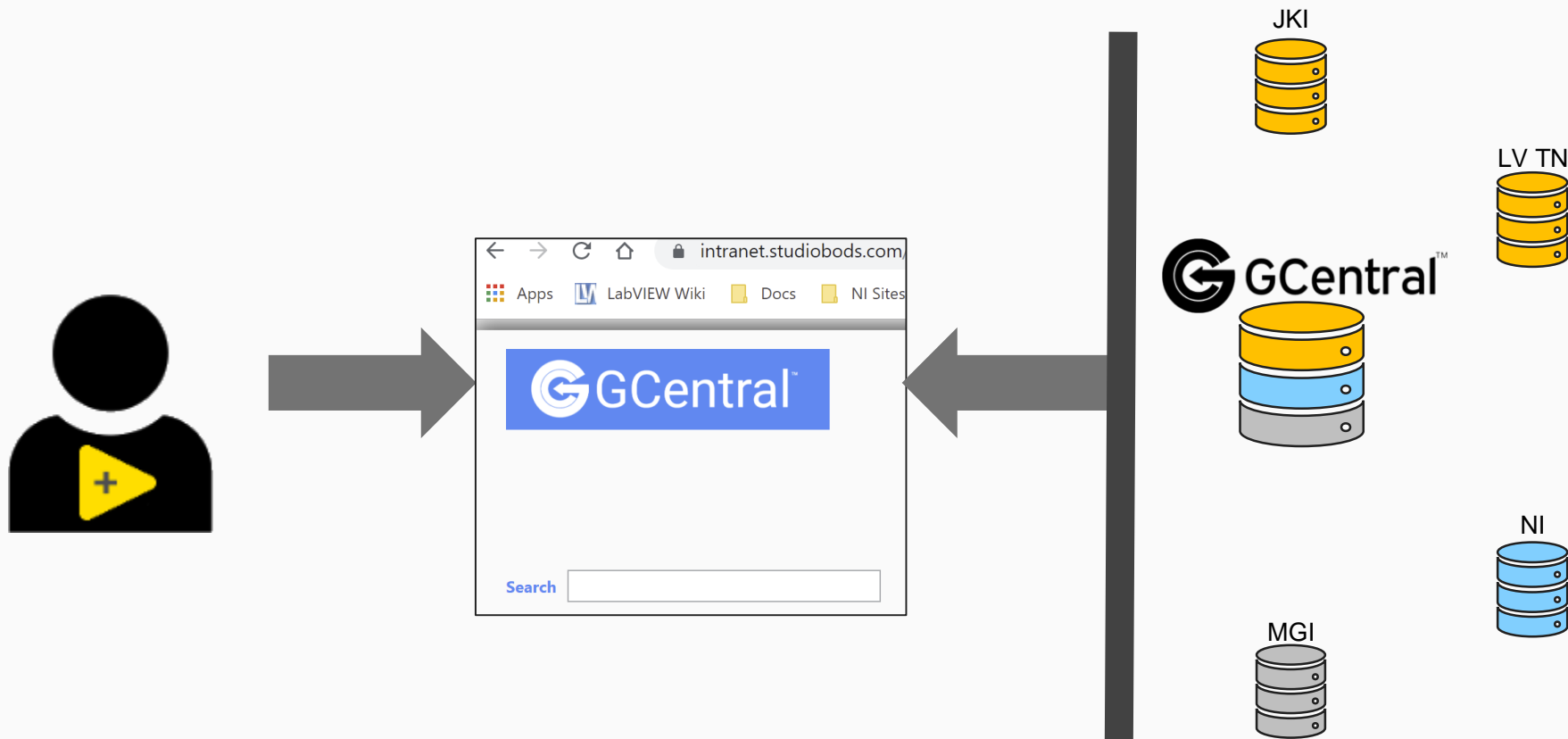
[ci](#) [continuous integration](#) [cd](#) [continuous deployment](#)

Dependencies (0)

none

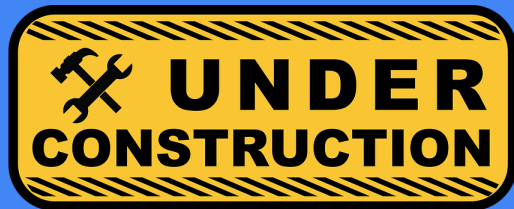


# Confidence - You can finally find code!





# Funding Plan Participation





Form financial partnerships with companies where LabVIEW is mission critical to success

1. National Instruments
2. Centers of Excellence
3. Alliance Partners
4. Consultants
5. ...

Form financial partnerships with companies where LabVIEW community leaders work

1. LabVIEW Champions
2. Centers of Excellence Tech Leads
3. Certified LabVIEW Architects
4. ...

Conduct crowdfunding campaigns

1. GCentral Kickstarter – Phase 1
2. GCentral Kickstarter – Phase 2
3. ...

We're looking for your feedback:

Survey 1: Your Thoughts On GCentral

[bit.ly/GCentral\\_2019CLA\\_Thoughts](https://bit.ly/GCentral_2019CLA_Thoughts)

Survey 2: Your Participation In GCentral:

[bit.ly/GCentral\\_2019CLA\\_Join](https://bit.ly/GCentral_2019CLA_Join)

# Call To Action

1. Fill out the surveys
2. Join the conversation
3. Volunteer on GCentral.org
4. Sponsor through crowd funding
5. Spread the word

[bit.ly/GCentral\\_2019CLA\\_Thoughts](https://bit.ly/GCentral_2019CLA_Thoughts)

[bit.ly/GCentral\\_2019CLA\\_Join](https://bit.ly/GCentral_2019CLA_Join)

[bit.ly/GCentral\\_Lava](https://bit.ly/GCentral_Lava)



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